WEED CONTROL:

Annual grass control in seedling phalaris and cocksfoot

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Perennial grasses are currently finding an increasing role within the cropping zone of NSW. These perennials, primarily phalaris and cocksfoot are grown in combination with either annual legumes such as subterranean clover or lucerne. In the year of establishment seedling perennials are most susceptible to annual weed competition which can be accentuated by competition from the cover crop. The more common and most difficult weeds to remove from perennial grass seedlings are annual grass weeds particularly in undersown cereal crops. The aim of this study was to identify post-emergent herbicides that could be used when establishing phalaris and cocksfoot pastures to control annual ryegrass and wild oats.

Methods

A glasshouse experiment was conducted with six perennial grass species, two cereal crops, subterranean clover and annual ryegrass. Herbicide treatments included an unsprayed control and nine post-emergent grass herbicides (Table 1) with 3 replications. Each pot contained 10 plants. The experiment was a row column design with additional unsprayed controls included to improve treatment comparisons.

Plants were sprayed at the 4 leaf stage. Dry matter results measure 30 days after spraying are presented for phalaris, cocksfoot and annual ryegrass.

Table 1. Post-emergent herbicides and herbicide rates, applied to plant species/cultivars.

Herbicides and rates								
Fusilade 0.25L/ha	Achieve WG 0.38 kg/ha	Hoegrass 1.0L/ha	Puma S 0.5L/ha	Sertin Plus 0.6L/ha	Mataven 4.5L/ha	Targa 0.125L/ha	Select 0.15L/ha	Simazine 1.25L/ha
Plant species and cultivar								
Phalaris cv. Sirolan	Cocksfoot cv. Currie	Wallaby grass cv. Taranna	Perennial ryegrass cv. Kangaroo Valley	Tall Fescue cv. Demeter	Lovegrass cv. Consol	Wheat cv. Dollarbird	Oats cv. Cooba	Annual ryegrass cv. Wimmera	Sub clover cv. Trikkala

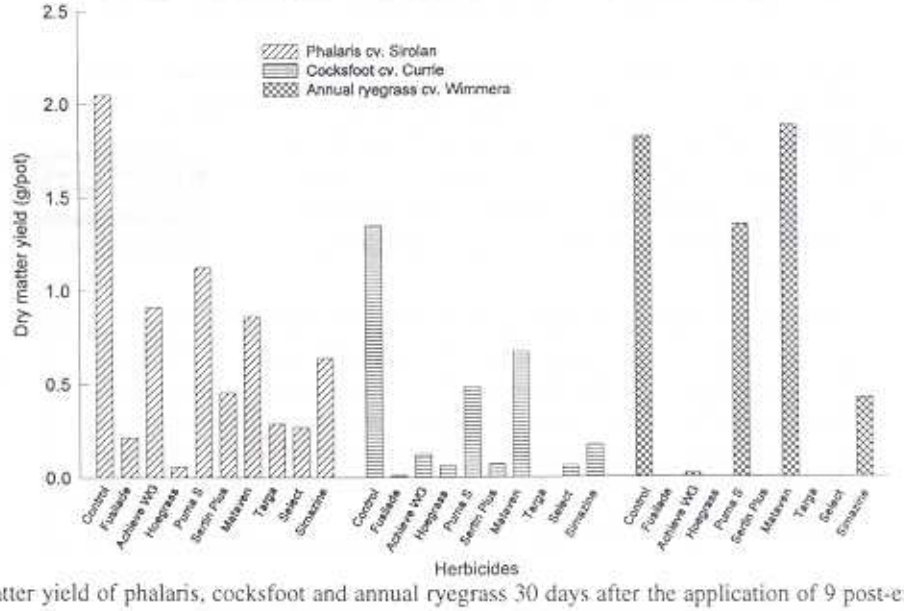

Figure 1. Dry matter yield of phalaris, cocksfoot and annual ryegrass 30 days after the application of 9 post-emergent herbicides.

Results and discussion

Of the 9 herbicides applied, 3 have potential for phalaris and two for cocksfoot. Puma S® and Mataven® reduced the dry matter production of phalaris by 52 and 57% while cocksfoot was reduced by 60 and 50% respectively (Figure 1). These products, however, only control wild oats. AchieveWG® which controls both annual ryegrass and wild oats reduced phalaris production by 57%. However AchieveWG® caused a 92% reduction in cocksfoot production (Figure 1). Fusilade®, Hoegrass®, Sertin Plus®, Targa® and Select® depressed dry matter production in both phalaris and cocksfoot by more than 75%.

These results have important implications for establishing phalaris and cocksfoot based pastures. Previously farmers have had to accept establishment losses caused by annual grasses, however these results suggest that these grasses can now be effectively controlled. Achieve WG® for example gave good control of annual ryegrass (Figure 1) while causing acceptable damage to seedling phalaris but unaccept-able damage to cocksfoot. The results presented are preliminary findings and need to be confirmed under field conditions. Where possible field testing should also examine cultivar differentiation with each of the above mentioned perennial grass species.